

AMENDMENT

(Amendment according to PCT Rule 11)

To: Director-General of the Patent Office

5 1. International application No.

PCT/JP00/01209

2. Applicant

SEIKO INSTRUMENTS INC.

8, Nakase 1-chome, Mihama-ku, Chiba-shi

10 Chiba 261-8507 JAPAN

Nationality Japan

Domicile Japan

3. Attorney

HAYASHI Keinosuke

15 1493, Sendabori, Matsudo-shi,

Chiba 270-2252 JAPAN

4. Object of amendment Claims

5. Contents of amendment

(1) As stated in the accompanying sheets, claim 1 is deleted.

20 In claim 2, "A manufacturing method of a liquid crystal display unit according to claim 1, wherein an orientation process for prescribing the falling direction of a liquid crystal molecule by continuously moving said polymeric substrate in the longitudinal direction is subsequently arranged after the process

25 for solidifying said vertical orientation film." is amended to "A manufacturing method of a liquid crystal display unit having

a pair of polymeric substrates each forming a transparent electrode pattern, and a liquid crystal layer arranged in a clearance formed by opposing said pair of polymeric substrates to each other;

the manufacturing method being characterized in that the

5 manufacturing method comprises a patterning process for forming many transparent electrode patterns in a longitudinal direction in a first polymeric substrate having a longitudinal length longer than a transversal width; a vertical orientation film forming process for forming a vertical orientation film in said first

10 polymeric substrate; an orientation process for prescribing the falling direction of a liquid crystal molecule of said liquid crystal layer while said first polymeric substrate is continuously moved in the longitudinal direction; a patterning process for forming many transparent electrode patterns in a longitudinal

15 direction in a second polymeric substrate having a longitudinal length longer than a transversal width; a vertical orientation film forming process for forming a vertical orientation film in said second polymeric substrate; an orientation process for prescribing the falling direction of the liquid crystal molecule

20 of said liquid crystal layer while said second polymeric substrate is continuously moved in the longitudinal direction; a process for opposing and sticking said first and second polymeric substrates of an elongated shape; and a process for arranging a liquid crystal of negative dielectric anisotropy in the clearance

25 formed by opposing said first and second polymeric substrates."

In claim 3, "said orientation process is performed by

irradiating light in one direction to said vertical orientation film" is amended to "the falling direction of the liquid crystal molecule is prescribed in parallel with a phase advancing axis or a phase delaying axis of optical anisotropy of the polymeric substrate by irradiating light in one direction to said vertical orientation film in said orientation process while said first or second polymeric substrate is continuously moved in the longitudinal direction".

In claim 4, "said orientation process is performed by rubbing said vertical orientation film in parallel with the longitudinal direction of said polymeric substrate" is amended to "the falling direction of the liquid crystal molecule is prescribed by performing rubbing in parallel with a phase advancing axis or a phase delaying axis of optical anisotropy of the polymeric substrate in said orientation process while said first or second polymeric substrate is continuously moved in the longitudinal direction".

In claim 5, "A manufacturing method of a liquid crystal display unit manufactured by forming many transparent electrode patterns in a longitudinal direction on a polymeric substrate having a longitudinal length longer than a transversal width; the manufacturing method being characterized in that the manufacturing method comprises a patterning process for forming the transparent electrode patterns on said polymeric substrate, and a vertical orientation film forming process for forming a vertical orientation film on said polymeric substrate; wherein

a buffer of said polymeric substrate is arranged within said patterning process, or between said patterning process and said vertical orientation film forming process so as to continuously move said polymeric substrate in the longitudinal direction in said vertical orientation film forming process." is amended to "A manufacturing method of a liquid crystal display unit according to claim 2, wherein a buffer of the polymeric substrate is arranged within said patterning process, or between said patterning process and said vertical orientation film forming process so as to continuously move the polymeric substrate in the longitudinal direction in said vertical orientation film forming process and said orientation process relative to said first or second polymeric substrate".

Claims 6 to 9 are deleted.

In claim 10, "polyimide, cinnamate," is amended to "cinnamate," and "claims 1 to 9" is amended to "claims 2 to 5".

6. List of attached documents Claims

Claims

1. (Deletion)

2. (After amendment) A manufacturing method of a liquid crystal display unit having a pair of polymeric substrates each forming a transparent electrode pattern, and a liquid crystal layer arranged in a clearance formed by opposing said pair of polymeric substrates to each other;

the manufacturing method being characterized in that the manufacturing method comprises:

10 a patterning process for forming many transparent electrode patterns in a longitudinal direction in a first polymeric substrate having a longitudinal length longer than a transversal width;

a vertical orientation film forming process for forming a vertical orientation film in said first polymeric substrate;

15 an orientation process for prescribing the falling direction of a liquid crystal molecule of said liquid crystal layer while said first polymeric substrate is continuously moved in the longitudinal direction;

a patterning process for forming many transparent electrode patterns in a longitudinal direction in a second polymeric substrate having a longitudinal length longer than a transversal width;

a vertical orientation film forming process for forming a vertical orientation film in said second polymeric substrate;

25 an orientation process for prescribing the falling direction of the liquid crystal molecule of said liquid crystal

layer while said second polymeric substrate is continuously moved in the longitudinal direction;

a process for opposing and sticking said first and second polymeric substrates of an elongated shape; and

5 a process for arranging a liquid crystal of negative dielectric anisotropy in the clearance formed by opposing said first and second polymeric substrates.

3. (After amendment) A manufacturing method of a liquid crystal display unit according to claim 2, wherein the falling direction
10 of the liquid crystal molecule is prescribed in parallel with a phase advancing axis or a phase delaying axis of optical anisotropy of the polymeric substrate by irradiating light in one direction to said vertical orientation film in said orientation process while said first or second polymeric substrate is
15 continuously moved in the longitudinal direction.

4. (After amendment) A manufacturing method of a liquid crystal display unit according to claim 2, wherein the falling direction of the liquid crystal molecule is prescribed by performing rubbing in parallel with a phase advancing axis or a phase delaying axis,
20 of optical anisotropy of the polymeric substrate in said orientation process while said first or second polymeric substrate is continuously moved in the longitudinal direction.

5. (After amendment) A manufacturing method of a liquid crystal display unit according to claim 2, wherein a buffer of the polymeric
25 substrate is arranged within said patterning process, or between said patterning process and said vertical orientation film forming

process so as to continuously move the polymeric substrate in the longitudinal direction in said vertical orientation film forming process and said orientation process relative to said first or second polymeric substrate.

5 6. (Deletion)

7. (Deletion)

8. (Deletion)

9. (Deletion)

10 10. (After amendment) A manufacturing method of a liquid crystal display unit according to any one of claims 2 to 5, wherein said vertical orientation film contains at least one high polymer among cinnamate, chalcone and azobenzene families.